

18 EQUIPMENT

- 18.1 Careful consideration has been given by the Owner as to the type of equipment which will be considered acceptable for this project. Substitutions shall not be considered.
- 18.2 The Owner, acting through the Regional Project Coordinators, reserves the sole right to determine the acceptability of any equipment not specifically specified for this project.
- 18.3 Requests to propose types of equipment other than that specified for the base bid shall be made in writing at least ten (10) working days prior to the specified bid date. Written requests shall be addressed to the Manager of Administrative Services.
- 18.4 Approval of substitutions shall be given at the Owner's sole discretion, only by written addendum, and no later than five (5) working days prior to the bid date.
- 18.5 Submission of bids including equipment that is not specified or is not approved by addendum for the base bid are made at the sole risk of the bidder. The Owner reserves the right to determine the acceptability of such a bid during the evaluation process.

19 PERFORMANCE BOND

- 19.1 A performance bond is not required for this project.

20 PROJECT COMPLETION

- 20.1 The Owner intends and expects to take delivery of all equipment and services (excepting subsequent years maintenance) by **June 30, 1997**.
- 20.2 This above stated date is the official and correct completion date for project completion and supersedes any and all other dates which may be indicated herein or elsewhere. This date will be changed or modified only by written addendum.
- 20.3 The above stated date defines the maximum time period permissible for completion of this project. The Bidder is requested to include in their narrative any and all anticipated difficulties which might prevent timely completion of the project.

End of Section

SECTION THREE

GENERAL CONDITIONS

1 INTRODUCTION

- 1.1 When the word "Contract" appears herein, it shall mean all of the following parts, together with all authorized modifications thereof:

Request for Bids
Bid Bond
Contract Agreement
Performance Bond
Insurance and Worker's Compensation Certificates
Instructions to Bidders
Proposed Sub-Contractor's Form
Conditions of the Contract
Technical Specifications
Drawings, Supplemental Drawings and Schedules
Addenda, If Any
Bidder's Response to Request For Bids

- 1.2 The contract documents are complementary and what is called for by and one shall be as binding as if called for by all.

2 EXECUTION

- 2.1 Within twenty-one (21) calendar days after the Contract has been mailed to the successful Bidder, the successful Bidder shall execute and return to the Owner's Project Coordinator a written Contract and Performance Bond, furnish proof of satisfactory insurance in the amounts and in the manner specified in the Contract Documents or Addenda thereto.
- 2.2 If return of the executed Contract and Bond within the specified time is impossible due to the absence of one or more of the required signers, an extension of time will be granted by the Project Coordinator, provided satisfactory and timely evidence is furnished by the successful Bidder.
- 2.3 The Contract and Performance Bond shall be in the form provided herein and made a part of the Contract Documents.
- 2.4 The forms and conditions required for completion of this Contract are to be provided as set forth in this specification. These forms are not required for bid submittal.

- 2.5 The manner and method for the execution of bonds shall apply to the execution of Contracts and Performance Bonds, except that business or post office addresses need not be shown. The acknowledgment of any signer or signers of the Contract or Performance Bond must be made by an authorized person on the proper acknowledgment form or forms.
- 2.6 If the Contract or Performance Bond is executed and acknowledged in another state by any person, a certification by an authorized person that said document was executed in accordance with the laws of such state must be attached.

3 PAYMENT BOND

- 3.1 A Payment Bond (Performance Bond) is not required.

4 CONTRACTOR'S INSURANCE

- 4.1 The Contractor shall not commence work under this Contract until he has obtained all insurance required under this paragraph and such insurance has been approved by the Owner.
- 4.2 The Contractor shall not permit any Subcontractor to commence work on his Subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.
- 4.3 The Contractor shall take out and maintain during the life of this Contract, Worker's Compensation Insurance for all of his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the Subcontractors similarly to provide Worker's Compensation Insurance for all the latter's employees.
- 4.4 In case any class of employees engaged in hazardous work under this Contract at the site of the project is not protected under Worker's Compensation Statute, the Contractor shall provide, and shall cause each Subcontractor to provide adequate insurance for the protection of his employees not otherwise protected.
- 4.5 The Contractor shall take out and maintain during the life of this Contract such Public Liability and Property Damage Insurance as shall protect him and any Subcontractors performing work covered by this Contract and the Owner and its agents and employees from any claims of any nature, whether meritorious or otherwise, including claims for damages for personal injury; including accidental death as well as from claims for property damages which may arise from operations under this Contract, whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by either of them, and the amounts of such insurance shall be as follows:
- a) Public Liability Insurance for Bodily Injury with the limit of liability not less than \$100,000.00 for each occurrence, and subject to an aggregate limit of \$1,000,000.00.
 - b) Property Damage Insurance with the limit of liability not less than \$100,000.00 for each occurrence, and subject to an aggregate limit of \$1,000,000.00.

- 4.6 The Contractor shall carry Workers Compensation Insurance in amounts and form which complies with all state and federal requirements.
- 4.7 The Contractor shall carry automobile liability insurance in an amount not less than \$1,000,000.00 for all claims arising out of a single occurrence, and \$100,000.00 for any one person in a single accident or occurrence.
- 4.8 The Contractor shall also obtain at (his/her) own expense and deliver to the Owner a Protective Liability Insurance Policy naming the Owner as the insured with the same insurance company with which the Contractor carries his Contractor's Public Liability Insurance and Automobile Liability Insurance. in an amount not less than \$1,000,000.00 for all claims arising out of a single occurrence, and \$100,000.00 for any one person in a single accident or occurrence.
- 4.9 In the case that any or all of the Contractor's work is sublet, the Contractor shall require the Subcontractor to procure and maintain all insurance required of the Contractor as set forth herein.
- 4.10 The insurance required herein shall provide adequate protection for the Contractor and its Subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by it, and also against any special hazards which may be encountered in the performance of this Contract.
- 4.11 The preceding paragraph requires the procurement of Contractor's protective insurance (or contingent public liability and contingent property damage policies) by a general contractor whose subcontractor has employees working on the project, unless the general public liability and property damage policy for rider attached thereto) of the general contractor provides adequate protection against claims arising from operations by anyone directly or indirectly employed by the contractor.
- 4.12 The Contractor and/or Subcontractor shall furnish to the Owner, prior to beginning the work, all insurance policies as specified herein, and satisfactory proof of carriage of all the insurance required by this Contract.

5 TIME REQUIREMENTS

- 5.1 The successful Bidder shall commence equipment delivery and work immediately following execution of the written Contract, and shall prosecute said work so as to furnish all equipment and complete all work, including acceptance testing, by the completion date set forth in Section Two.

6 SCHEDULE OF DELIVERY AND SERVICES

- 6.1 The Bidder to whom the Contract is awarded shall furnish the Owner's Project Coordinator with a project schedule with major milestones clearly identified.
- 6.2 This schedule must be furnished within thirty (30) days after receipt of Notice of Award.

7 EXTENSION OF TIME

- 7.1 The Project Coordinator will grant extensions of time when delays occur due to events which are beyond the reasonable control of the Contractor.
- 7.2 All requests and claims for extensions of time must be filed with the Project Coordinator at the time of the cause for delay, or immediately following same.

8 DELIVERY AND LIQUIDATED DAMAGES

- 8.1 It is mutually understood and agreed by and between the parties to the Contract, in the execution of the same, that time is of the essence of the Contract for the completed project.
- 8.2 Extensions of time granted by the Owner in accordance with the provisions of this Specification shall not operate to the contrary, unless such extensions granted by the Owner specifically provide for the waiving of liquidated damages during and over such period of the extension of time.
- 8.3 The Contractor shall be responsible for delivery of all equipment to the location acceptable to and specified by the Owner and for insurance of that equipment during its delivery.
- 8.4 The Contractor shall be responsible for delivery of all equipment to the location(s) acceptable to and specified by the Owner and for the insurance of that equipment during its delivery.
- 8.5 The Owner shall have the right to deduct liquidated damages from any moneys in its hands, otherwise due, or to become due to the Contractor, or to sue for and recover compensation for damages for nonperformance of this Contract at the time stipulated herein and provided for.

9 CORRELATION AND INTENT OF THE DOCUMENTS

- 9.1 The intention of the project documents is to include the complete description of all labor and materials necessary to the proper execution of the procurement.
- 9.2 It is not intended that materials or work not covered by or properly inferable from any heading, branch, class or trade of the specifications shall be supplied, unless distinctly so noted in the Request for Bids.
- 9.3 Materials or work described in words which, so applied, have a well known technical or trade meaning shall be held to refer to such recognized standards.

10 DRAWINGS AND INSTRUCTIONS

- 10.1 The Regional Project Coordinators shall furnish with reasonable promptness, additional instructions by means of drawings or otherwise, necessary for the proper execution of the Contract.

- 10.2 All such drawings and instructions shall be consistent with the Contract Documents, true developments thereof, and reasonably inferable therefrom.
- 10.3 Work shall be executed in conformity therewith, and the Contractor shall do no work without the proper drawings and instructions. In giving such additional instructions, the Project Coordinator shall be authorized to make minor changes in the work, not involving extra cost and not inconsistent with the purposes of the work.
- 10.4 The Contractor shall keep one copy of the specifications for this Project in good order and available to the Project Coordinator and his representatives.
- 10.5 It is the intention of these specifications to provide for this procurement in a complete and thorough manner. The Contractor to whom the Contract is awarded shall furnish all materials, and all labor necessary to complete the project in accordance with these specifications, and the Contractor shall be entitled to no extra compensation for work done not specifically mentioned herein unless extra work has been ordered in writing by the Project Coordinator.

11 PROJECT COORDINATOR'S DECISIONS

- 11.1 The Project Coordinator shall in all cases determine the quality, acceptability and fitness of the work and materials which are to be paid for hereunder, and shall decide all questions which may arise as to the fulfillment of this Contract on the part of the Contractor.
- 11.2 The Project Coordinator's interpretation of the Contract and his determination and decision thereon shall be final and conclusive; and such determination and decision, in case any question arises, shall be a condition precedent to the right of the Contractor to receive any money hereunder.
- 11.3 The Project Coordinator shall have the right to correct, in writing, any clerical, mathematical or minor errors or omissions in the specifications when such corrections are necessary for the proper fulfillment of their intention.

12 CONTRACT MANAGEMENT

- 12.1 The Contractor will appoint a Project Manager who will be responsible for the progress and quality of all work to be performed, and will be available for discussion of any Contract issues, when requested by the Project Coordinator.
- 12.2 The Project Coordinator will deliver all official documents addressed to the Contractor to the Project Manager. The Project Manager shall be available at the time of Contract award by the Owner. The name, address and telephone number of the person to be designated Project Manager shall be included with the Contract.

13 PRECEDENCE OF DOCUMENTS

- 13.1 In order to resolve any inconsistencies in the Contract Documents, precedence shall be given in the following order:

- a) Request for Bids; General Terms and Conditions.
 - b) Request for Bids; Technical specifications.
 - c) Bidder's Bid Proposal.
- 13.2 The Request for Bid shall remain the document of precedence concerning issues related to Installation, Operation, Maintenance, Warranty, Training, Documentation and Acceptance unless formal exemption is granted in writing to the Contractor by the Owner.

14 INTERPRETATIONS AND CHANGE ORDERS

- 14.1 No oral interpretation shall be made to any bidder as to the meaning of any of the Contract documents, or to modify any of the provisions of the Contract documents. Every request for an interpretation shall be made in writing and addressed and forwarded to the Consultant. The Owner will not be responsible for any other explanation or interpretation of the Plans and specifications.
- 14.2 Conditions which require a change or major variation from the original plans shall be covered by a Change Order which will be issued by the Owner.
- 14.3 The change order will set forth in complete detail the nature of the change and, if necessary, the reasons therefore.
- 14.4 The compensation to be paid the Contractor, and whether it is an addition or a reduction with respect to the original Contract costs, will be covered in detail.
- 14.5 Should additional or supplemental drawings be required, they will be furnished by the Owner.

15 SUBMISSION OF INVOICES FOR SERVICES

- 15.1 The Contractor shall submit to the Owner all invoices and requests for payment for equipment and services in a timely manner, and only after all equipment and work to be provided is in place and certified fully operational.

16 PAYMENTS

- 16.1 The Contractor is required to submit a proposed payment schedule for equipment and services which are purchased as part of the Contract.
- 16.2 Payments on contracts and payments for services will be made only upon delivery and installation of all equipment and services included as part of the Contract or agreement.
- 16.3 Owner will make payment to the Contractor for equipment and services provided by the Contractor according to the mutually agreed upon schedule. Equipment and services will not be paid for prior to delivery.

- 16.4 Certification for payment shall be made by the Project Coordinator of the delivery and installation of said equipment or services.
- 16.5 No such payments shall be held to constitute an acceptance, in whole or in part, of materials furnished or work completed, by the Owner prior to making final acceptance and final payment after full completion of the Contract.
- 16.6 The Owner will make arrangements so that the formal acceptance procedures as described herein will commence within two weeks of notification that the work is ready for acceptance by the Contractor.
- 16.7 Final payment of all sums due to the Contractor shall be made within forty five (45) days after the final completion of the project and within forty five (45) days of final acceptance of the materials, equipment and services for the total project by the Project Coordinator.
- 16.8 Final payment shall not be made until the system is proven functional at 99% or better for a minimum of 30 contiguous days.

17 RETAINAGE

- 17.1 Retainage of amounts paid by the Owner for equipment and services is set at ten (10) percent of all amounts due the Contractor.

18 CERTIFICATE OF COMPLETION AND ACCEPTANCE

- 18.1 Within five working days after all the equipment has been installed and has been fully operational in its final system configuration and has met the acceptance criteria detailed in each respective subsection, and when in the opinion of the Project Coordinator, this Contract shall have been fully and completely performed on the part of the Contractor, the Project Coordinator shall submit a Letter of Final Completion and Acceptance.

19 RIGHT TO WITHHOLD CERTAIN AMOUNTS AND MAKE APPLICATION THEREOF

- 19.1 If evidence is produced before the final settlement of all or any balances that the Contractor has failed to pay laborers employed in his work or failed to pay for materials used therein, or if the Owner has reason to suspect the same, the Owner may, after notifying the Contractor and providing two weeks for the Contractor to respond to the Owner, withhold such balances and upon evidence satisfactory to the Owner as to the amount due for such labor and materials, the Owner acting as the agent of the Contractor may settle and pay for the same and charge the amounts to the Contractor and deduct the same from the said balance or balances.
- 19.2 No payment to laborers or materials suppliers shall be made by the Owner acting for the Contractor, unless and until the Contractor has been notified of such pending payments and has had two weeks to respond to the Owner as to the veracity of such claims.

20 UNITS OF PAYMENT

- 20.1 No extra or customary adjustments of any kind (except as herein agreed upon) will be allowed to the Contractor in measuring the work done under these specifications, but the actual work or cost shall be considered i.e., the Owner will pay only for actual work performed or equipment furnished as per Contract prices on Project Coordinator's approval which shall be considered final.

21 ASSIGNMENT

- 21.1 The Contractor shall not assign this Contract, or any part hereof, or any moneys due or to become due hereunder, without the approval of the Owner nor without the consent of the Surety unless the Surety.

22 SUBCONTRACTING

- 22.1 No part of this Contract shall be sublet without the full and prior approval of the Owner.
- 22.2 If the Contractor shall sublet any part of this Contract, the contractor shall be as fully responsible to the Owner for the acts and omissions of the Subcontractor and of the persons either directly or indirectly employed by his Subcontractor as he is for the acts and omissions of persons employed by himself.
- 22.3 Contractors intending to subcontract portions of the work included in this project shall provide all information required by this specification.
- 22.4 The Contractor shall obtain from each of (his/her) subcontractors all of the required insurance forms and certificates and submit them to the Project Coordinator along with the signed Contract.
- 22.5 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relating to this work, to bind all Subcontractors to the Contractor by all the terms herein set forth, insofar as applicable to the work of Subcontractors and to give Contractor the same power regarding termination of any subcontract as the Owner may exercise over Contractor under provisions of this Contract.
- 22.6 Nothing contained in this Contract shall create any contractual relations between Subcontractor and the Owner, or between any Subcontractors.

23 NOTICE AND SERVICE THEREOF

- 23.1 Any notice to any Contractor from the Owner relative to any part of this Contract shall be considered delivered and the service thereof completed when said notice is delivered to the Contractor's Project Manager.

24 TITLE FOR EQUIPMENT

- 24.1 Title for all parts of the system furnished which are purchased will transfer to the Owner at the time payment is made. Prior to that time all equipment remains the property and responsibility of the Contractor.

25 CONTRACTOR'S LIABILITY

- 25.1 The Contractor will be required by his Contract to defend, indemnify, and hold the Owner harmless from all claims of damages, from any and all causes during the Contract, and until all work has been accepted by the Owner, and he shall pay all losses, damages or claims recovered that the Owner may be liable for, and save the Owner harmless in all things, from any accident or casualty, damages, losses or claims which may happen or arise out of or related to proponent's performance under this Contract.

26 PATENTS

- 26.1 The Contractor shall hold and save the Owner, its officers, agents, engineers, servants, and employees harmless from liability of any nature of any kind, including cost and expenses for or on account of any patented or non-patented invention, article, or appliance manufactured or used in the work as will satisfy the Owner's requirements.

27 ACCIDENT PREVENTION

- 27.1 Precaution shall be exercised at all times for the protection of persons (including employees) and property. The safety provisions of applicable laws, building and construction codes shall be observed. Machinery, equipment and other hazards shall be guarded or eliminated in accordance with the safety provisions of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of state or local laws and ordinances.

28 LOCAL LAWS

- 28.1 The Contractor shall abide by and observe all laws, local ordinances and regulations relating to the work to be done, and the use of public streets, alleys and highways. He shall secure all permits and pay all license fees required by law before beginning the work.

29 STATE LAWS

- 29.1 Any Contract resulting from the bids taken herein shall be governed, construed and enforced according to the laws of State of Minnesota.
- 29.2 All actions, whether sounding in Contract or in tort, relating to the validity, construction, interpretation and enforcement of the Contract shall be instituted in the courts of the State of Minnesota located in the appropriate county of Minnesota.

- 29.3 In accordance herewith the parties to this Contract submit to the jurisdiction of the courts of the State of Minnesota, located in the appropriate county of Minnesota.

30 SUSPENSION OF WORK

- 30.1 The Project Coordinator shall have the right to suspend the work, or any part of it, for noncompliance or refusal to carry out the specifications, under a fair and reasonable interpretation of the specifications by the Project Coordinator.

31 INSPECTION

- 31.1 Representatives of the Owner as designated by the Project Coordinator shall have the right to inspect all work materials, payrolls, records of personnel, invoices of materials and other relevant data and records pertinent to and related to this Contract during the life of the Contract.

32 INJURY TO WORK

- 32.1 All losses due to damage or injury to the work resulting from the negligence of the Contractor shall be borne by the Contractor until completion of the Contract and acceptance of the work by the Project Coordinator, and no work shall be received until fully and completely finished in accordance with the specifications herein.

33 DEFECTIVE EQUIPMENT

- 33.1 Defective equipment may be condemned at any time before the final acceptance of the installation, and such defective equipment shall be remedied at once to the satisfaction of the Project Coordinator.

34 REJECTION OF EQUIPMENT AND WORK

- 34.1 The duty of rejecting defective equipment shall evolve equally upon the Contractor and Project Coordinator.
- 34.2 Faulty equipment and defective work may be rejected at any time before the final completion and acceptance of the work.
- 34.3 When defective equipment has been condemned it shall be at once removed from the project and be stored or otherwise disposed of by the Contractor in a manner acceptable to the Project Coordinator.

35 EXTRA WORK

- 35.1 No claims for extra work shall be allowed unless same shall have been previously ordered by the Project Coordinator in writing, compensation being mentioned in written order and not to exceed ten percent (10%) of the total Contract amount.
- 35.2 In order to ascertain the cost or value of any change or extra work required under the above clause of the Contract, the Contractor shall preserve and afford to the Project

Coordinator every facility for the examination of bills, invoices, payrolls, vouchers, or other necessary and directly pertinent evidence for the verification of such cost and upon demand of the Coordinator, the Contractor shall produce for examination such required data.

36 TERMINATION FOR BREACH

- 36.1 Reasons for Termination of Contract for breach shall be those set forth in the Contract. If no contractual provision is made, the following shall apply:
- 36.2 In the event that any of the provisions of this Contract are violated by the Contractor or by any of his Subcontractors, the Owner may serve written notice upon the contractor and the Surety of its intention to terminate such Contract; such notices to contain the reasons for such intention to terminate the Contract, and unless within 10 days after the service of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement for correction be made, the Contract shall, upon the expiration of said 10 days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor, and the Surety shall have the right to take over and perform the Contract, provided, however, that if the Surety does not commence performance immediately following his notice of termination, the Owner may take over the work and prosecute the same to completion at the expense of the Contractor, and the Contractor and his Surety shall be liable to the Owner for any excess cost to complete the system or subsystem to a capability not exceeding that originally required by the Contract, and in such event the Owner may take possession of and utilize in completing the work, such materials as have been delivered to the work site for installation.
- 36.3 The foregoing provisions are in addition to, and not in limitation of, the rights of the Owner under any other provisions of the Contract, Owner, ordinances, and state and federal laws.

End of Section

SECTION FOUR

PROJECT DESCRIPTION

1 GENERAL

- 1.1 This specification sets forth conditions and requirements which apply to the project and project members named herein and referred to as Owner.
- 1.2 The Owner intends to evaluate all suitable and reasonable options in its consideration of equipment required for implementation of this telecommunications network.
- 1.3 All of the conditions with respect to such an agreement which are set forth herein must be agreed to in writing as part of the contract language.
- 1.4 The Owner has expressed its clear and distinct preference for Compressed Digital Video Transport technology, therefore, other solutions shall not be considered.
- 1.5 The Owner reserves the right to select that specific variation of the technology which it deems shall best serve the project, regardless of the costs submitted in the responses received. 'Specific' includes, but is not limited to, choice of equipment manufacturer, network management solution, etc.

2 SYSTEM CONFIGURATION

- 2.1 These specifications describe video transmission terminal equipment including video conferencing systems (roll-about) complete with video codec, bandwidth manager/inverse multiplexers, remote port modules (hub extenders), serial code-operated switches and dial-up modems for several regions in Minnesota.
- 2.2 The primary use of this telecommunications system shall be for private line video and audio connectivity among member sites, and private line video and audio connectivity between member sites and non-member sites.
- 2.3 The complete system shall include all video codecs, echo cancellers, monitors, cameras, audio equipment, bandwidth managers/inverse multiplexers, and all other equipment required to facilitate a complete roll-about video conference system, auxiliary and miscellaneous equipment, equipment racks, connectors, wire and cable, etc.
- 2.4 Terminal equipment for each site shall be placed and installed on the premises of the site being served. Installation and set-up of equipment shall be by others and is not part of this contract. Warranty service and service contracts shall be by the equipment vendor and shall be part of this contract.
- 2.5 Each active site shall have the ability to transmit and receive video and audio signals for teleconferencing purposes. Each site shall have the ability to integrate data services on the same PRI/T1 used for video services.

3 SYSTEM INTEROPERABILITY

- 3.1 Video Codecs and related equipment supplied for this system shall be operationally compatible with the BT Visual Images (British Telecom) Model VC2300, the CLI (Compression Labs) Rembrandt II/VP and the CLI Radiance and the NEC TC5000EX7, all of which are currently deployed at educational institutions, state facilities, and MEANS/Polaris Telecom facilities throughout Minnesota.

4 SYSTEM RESPONSIBILITY

- 4.1 It is the responsibility of the Contractor to provide a complete and working video conferencing system and other components that shall operate continuously in a satisfactory and reliable manner (this responsibility does not extend to transport facilities).
- 4.2 The Bidder shall immediately report in writing to the Project Coordinator and to the Consultant, any concern or question as to their ability to meet the requirements of this specification.
- 4.3 All incidental items normally required for the installation and operation of the system and the equipment specified, even if not specifically mentioned herein or shown on drawings, shall be supplied by the Contractor without claim for additional payment.
- 4.4 The Contractor is responsible for verifying the completeness of all parts lists, the correctness of type numbers and the overall suitability of its equipment to meet the intent of the specification.
- 4.5 The Contractor shall not be responsible for adjusting and balancing the systems upon completion of installation, nor for demonstrating the operation and maintenance procedures of the system to the Owner's representatives.
- 4.6 The Contractor shall be responsible for providing the test equipment and technicians required to facilitate equipment/system maintenance.

5 QUANTITIES

- 5.1 The quantities of equipment specified in the schedule and the bid form represent the best estimate of requirements for the participating regions. The Owner reserves the right to increase and/or reduce these quantities as required to meet the specific needs of the project at the time the Contract is executed.

6 DOCUMENTATION

- 6.1 The Contractor shall, prior to system final acceptance, furnish to the Owner one (1) set of all documentation which is required for the Owner's operation and maintenance of the system.
- 6.2 The Contractor shall also provide one (1) set of the same documentation to the regional coordinator of each region.

- 6.3 The Contractor shall also provide four (4) sets of the same documentation to the network provider, Minnesota Equal Access Network Services.

7 WARRANTY

- 7.1 The Contractor shall warrant to the Owner that the hardware and software to be delivered shall conform to the specifications, and be new and free from defects in materials and workmanship.
- 7.2 The Contractor shall warrant all materials, hardware and software, supplied by him under the purchase contract for a period of fifteen (15) full months following final acceptance. If any defect or malfunction occurs prior to expiration of that period of time, the Contractor shall determine the cause, remove, repair or replace the defective unit at his sole cost and expense.
- 7.3 Initial Warranty
- a) Initial warranty shall be a minimum of "next-day" "Spare in the Air" service for the first three (3) months following final acceptance. This is presumed to be the system and equipment manufacturer's standard warranty.
 - b) Extended warranty shall be a minimum of "next-day" "Spare in the Air" service for a term which shall expire on June 30, 1998, regardless of equipment installation or acceptance date. This period shall range between 9 and 15 months depending on installation schedule.
- 7.4 Year Two and Three Service Contracts
- a) Second and third year service shall be quoted as shown on the attached bid form. The Owner shall give consideration to costs for "next-day" "Spare in the Air" service and "next-day" on-site service.
 - b) Selection of these options shall be at the discretion of the individual regional sites and should be priced accordingly.

8 MAINTENANCE

- 8.1 The Contractor shall have in their employ factory trained and certified technicians for the equipment furnished for this project. This requirement applies to all systems and equipment, hardware and software, excluding the serial code-operated matrix switch and the dial-up modem.
- 8.2 Suppliers and distributors which do not employ factory trained and certified technicians for the equipment specified herein shall be considered non-compliant.
- 8.3 The Contractor shall provide all preventative (scheduled) and corrective (nonscheduled) maintenance of all equipment provided and installed as part of the purchase agreement, and shall maintain the equipment and/or systems to specification minimums for the period specified under "Initial Warranty".

- 8.4 If the maintenance organization is any company or person other than the Contractor, that company or person shall be identified prior to execution of the contract.
- 8.5 The Owner shall be responsible for the cost of maintenance, repair, and replacement of installed and operational terminal equipment located on the Owner's premises which results from un-authorized adjustments (tampering), misuse and abuse.
- 8.6 The Contractor shall provide to the Regional Project Coordinator with the name, address, and telephone numbers of the responsible repair person or organization.

9 ACCEPTANCE PROCEDURE

- 9.1 Acceptance of installed equipment shall be on a site-by-site basis and the result of operational tests conducted by and between the site installer and Minnesota Equal Access Network Services.
- 9.2 Final acceptance shall be given by joint agreement of the Regional Coordinator and the on-site facilitator.

10 TRAINING

- 10.1 The Contractor shall not be required to provide user training as part of this contract.

End of Section

SECTION FIVE

EQUIPMENT & WORK INCLUDED

1 GENERAL REQUIREMENTS

- 1.1 All equipment furnished for this project shall be new, of solid-state design, and of the latest design presently in production by the manufacturer.
- 1.2 All equipment furnished for this project shall be assembled as specified and tested at the manufacturer's production facilities and not assembled in the field. Exceptions to this requirement may be made upon specific application to the Project Coordinator who has sole authority in this matter.

2 EQUIPMENT - GENERAL DESCRIPTION

- 2.1 The equipment provided for this project shall permit full and simultaneous duplex video and audio communication between each outlying site and the hub site, employing compressed digital video and audio transmission technology.
- 2.2 The equipment provided for this project shall permit dial-up connectivity via ISDN Primary Rate facilities using inverse multiplexing.
- 2.3 The equipment provided for this project shall permit multiplexed transmission so as to permit transmission of multiple and simultaneous data along with video.
- 2.4 If the Bidder cannot comply with any one or more of the requirements set forth in these paragraphs, the Bidder shall include with their bid a clear, concise, and complete narrative stating the reason(s) why exception must be taken. The reasons may be economic, technical, etc. The Owner will make the final determination as to the acceptability of bids which take exception to the requirements set forth herein.

3 VIDEO CONFERENCING SYSTEM - TYPE "A1"

- 3.1 The Video Conferencing System shall support the duplex transmission of motion video and audio signals, graphic (still) video signals and data signals.
- 3.2 The Video Conferencing System shall include one (1) 32" Sony or Mitsubishi video monitor-receiver and one (1) PictureTel PowerCam 100 camera system.
- 3.3 The Video Conferencing system shall include an audio system, consisting of an external, 8 input, gated audio mixer with an internal 10LogNOM feature. Gating function for each of the eight (8) inputs shall be field selectable.
- 3.4 The audio mixer shall be securely mounted in the system roll-about cart.

- 3.5 Microphones shall be the Audio Technica Model 961. Provide four (4) units with the Video Conferencing system.
- 3.6 Provide four (4) durable (rubber jacked) microphone extension cords with 3-pin professional connectors to match mixer and microphone connectors. Cord length shall be 25 feet.
- 3.7 The Video Conferencing system shall be self-contained in a single, durable, attractive cart complete with heavy duty casters.
- 3.8 The Video Codec shall be equipped with a dual V.35 serial interface with dual RS-366 dialing.
- 3.9 The Video Codec shall support the current ITU H.320 (Px64) suite of standards, including the most current H.242, H.243 and T.120 standards.
- 3.10 The Video Codec shall be equipped for, and support, single channel, Nx56 and Nx64, dial-up calls at FCIF (352 x 288 pixel video resolution), 30 frame-per-second operation at 672 and 768 Kb/s.
- 3.11 The Video Codec shall be equipped for, and support, single channel, Nx56 and Nx64, single channel, dial-up calls at FCIF (352 x 288 pixel video resolution), 15 frame-per-second operation from 112 Kb/s to 384 Kb/s.
- 3.12 The Video Codec shall be equipped for, and support, dual channel, Nx56 and Nx64, dial-up calls at QCIF (176 x 144 pixel video resolution), 15 frame-per-second operation at 112 Kb/s and 128 Kb/s.
- 3.13 The Video Codec shall be equipped for, and support, video graphics transmission (still frame) at 352 x 288 pixel video resolution.
- 3.14 The Video Codec shall be equipped for, and support, G.722, G.711 and G.728 audio coding.
- 3.15 The Video Codec shall be equipped with an internal, full duplex, self adapting audio echo cancellation system which includes automatic noise suppression and automatic gain control (IDEC II).
- 3.16 The Video Codec shall include an auto-adapt function which shall automatically adjust to the baud rate, line coding and line framing of the connected codec or MCU, and automatically adjust to FCIF and QCIF modes of operation.
- 3.17 The Video Codec shall include a full-featured, infra-red local user control panel capable of controlling the Video Codec's user functions.
- 3.18 The Video Codec shall include video input connections for an Owner furnished document camera.
- 3.19 The Video Codec shall include video and audio input and output connections for an Owner furnished video cassette recorder.

- 3.20 The Video Codec shall connect physically to an Ascend bandwidth manager/inverse multiplexer via a dual V.35 interface which includes dual RS-366 dialing interface.
- 3.21 The Video Codec shall have integral diagnostic software which includes self-check at power up, run time monitoring and alarming, and remote access to all diagnostic functions.
- 3.22 The Video Codec shall include an RS-232 maintenance terminal port which provides access for codec setup, operation and diagnostic functions.
- 3.23 Where access to control and diagnostic functions require special software (other than conventional ASCII terminal access), that software and full documentation shall be provided and included in the purchase price (PictureTel Remote). The Bidder shall also provide one (1) copy of that same software to the project's network provider, Minnesota Equal Access Network Services.
- 3.24 The Video Conferencing system shall operate from standard 120 volt AC electrical power.
- 3.25 The Video Conferencing System shall be the Picture-Tel Venue 2000, Model 50.
- 3.26 The Bidder (Contractor) shall be the authorized distributor for the Video Conferencing system furnished to this project.
- 3.27 Provide to the Owner one (1) complete documentation package for each Video Conferencing system which shall include all relevant installation, set-up, operation and maintenance information.

4 VIDEO CONFERENCING SYSTEM - TYPE "A2"

- 4.1 The Video Conferencing system shall be the Picture-Tel Venue 2000, Model 50. It shall meet all requirements as set forth for the Type "A" system, and include the following additional items.
- 4.2 One (1) additional 32" Sony or Mitsubishi video monitor-receiver.
- 4.3 One (1) additional heavy duty cart which matches the equipment cart furnished for the Type "A" system.

5 VIDEO CONFERENCING SYSTEM - TYPE "A3"

- 5.1 The Video Conferencing system shall be the Picture-Tel Venue 2000, Model 50. It shall meet all requirements as set forth for the Type "A" system, and include the following additional items.
- 5.2 One (1) additional 32" Sony or Mitsubishi video monitor-receiver.
- 5.3 One (1) additional heavy duty cart which matches the equipment cart furnished for the Type "A" system.

- 5.4 One (1) additional PictureTel PowerCam 100 remote control video camera mounted on a heavy duty tripod. Cables furnished shall permit direct connection to the Video Codec and be of sufficient length to permit locating the camera up to 25 feet from the Video Codec.

6 BANDWIDTH MANAGER-INVERSE MULTIPLEXER - TYPE "B1"

- 6.1 The Bandwidth Manager-Inverse Multiplexer shall support dial-up video conferencing and a dedicated data router connection, functioning both as a bandwidth manager and as an inverse multiplexer.
- 6.2 The Bandwidth Manager-Inverse Multiplexer shall be equipped with two (2) T1/PRI network interface ports, one (1) configured with integrated CSU and one (1) configured as a DSX port.
- 6.3 The Bandwidth Manager-Inverse Multiplexer shall be equipped with four (4) V.35 serial ports that shall support:
- a) One (1) dual V.35/RS-366 video conference system,
 - b) One (1) single V.35/RS-366 video conference system, and
 - c) One data V.35 data router connection.
- 6.4 The Bandwidth Manager-Inverse Multiplexer V.35 serial connections shall support data rates up to and including 768 Kb/s. These same ports shall also support the RS-366 dialing functions.
- 6.5 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for AT&T ESS, NorTel DMS (National 1) and Siemens EWSD central office switches.
- 6.6 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for Teleos Model 60 and Model 200 video switches.
- 6.7 The Bandwidth Manager-Inverse Multiplexer shall be equipped with set-up, operation and diagnostic functions accessible through an RS-232 maintenance terminal port.
- 6.8 The Bandwidth Manager-Inverse Multiplexer shall include SNMP (Simplified Network Management Protocol) capability and a 10BASE-T Ethernet connection.
- 6.9 The Bandwidth Manager-Inverse Multiplexer shall be capable of mounting in the roll-about video conferencing systems specified above.
- 6.10 The Bandwidth Manager-Inverse Multiplexer shall operate from standard 120 volt AC electrical power.
- 6.11 The Bandwidth Manager-Inverse Multiplexer shall be the Ascend MultiBand Plus T1/PRI (Model MBP-T1-STD).

- 6.12 The Bandwidth Manager-Inverse Multiplexer shall include all of the following:
- a) MBP-T1-STD Base Unit
 - b) MB-AC-RM Rack Mounting Brackets
 - c) MB-SR-T1-STD Installed Software Release MBT1-STD
 - d) MB-HO-CSU Installed Hardware Option 1 CSU Interface
 - e) MB-HO-SNMP Ethernet Port Option
 - f) MB-SO-ISDN Installed ISDN Software Package
 - g) MBHD-V.35-366 V.35/RS366 Codec Cables (Generic), 2 each
 - h) MBHD-V.35 V.35 Router Cable (Generic), 1 each
- 6.13 The Bidder (Contractor) shall be the authorized distributor for the Bandwidth Manager-Inverse Multiplexer furnished to this project.
- 6.14 Provide to the Owner one (1) complete documentation package for each Bandwidth Manager-Inverse Multiplexer which shall include all relevant installation, set-up, operation and maintenance information.

7 BANDWIDTH MANAGER-INVERSE MULTIPLEXER - TYPE "B2"

- 7.1 The Bandwidth Manager-Inverse Multiplexer shall support dial-up video conferencing and a dedicated data router connection, functioning both as a bandwidth manager and as an inverse multiplexer.
- 7.2 The Bandwidth Manager-Inverse Multiplexer shall be equipped with two (2) T1/PRI network interface ports, both (2) configured with integrated CSU.
- 7.3 The Bandwidth Manager-Inverse Multiplexer shall be equipped with four (4) V.35 serial ports that shall support:
- a) Two (2) dual V.35/RS-366 video conference system.
- 7.4 The Bandwidth Manager-Inverse Multiplexer V.35 serial connections shall support data rates up to and including 768 Kb/s. These same ports shall also support the RS-366 dialing functions.
- 7.5 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for AT&T ESS, NorTel DMS (National 1) and Siemens EWSD central office switches.
- 7.6 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for Teleos Model 60 and Model 200 video switches.
- 7.7 The Bandwidth Manager-Inverse Multiplexer shall be equipped with set-up, operation and diagnostic functions accessible through an RS-232 maintenance terminal port.

- 7.8 The Bandwidth Manager-Inverse Multiplexer shall include SNMP (Simplified Network Management Protocol) capability and a 10BASE-T Ethernet connection.
- 7.9 The Bandwidth Manager-Inverse Multiplexer shall be capable of mounting in the roll-about video conferencing systems specified above.
- 7.10 The Bandwidth Manager-Inverse Multiplexer shall operate from standard 120 volt AC electrical power.
- 7.11 The Bandwidth Manager-Inverse Multiplexer shall be the Ascend MultiBand Plus T1/PRI (Model MBP-T1-STD).
- 7.12 The Bandwidth Manager-Inverse Multiplexer shall include all of the following:
 - a) MBP-T1-STD Base Unit
 - b) MB-AC-RM Rack Mounting Brackets
 - c) MB-SR-T1-STD Installed Software Release MBT1-STD
 - d) MB-HO-2CSU Installed Hardware Option 1 CSU Interface
 - e) MB-HO-SNMP Ethernet Port Option
 - f) MB-SO-ISDN Installed ISDN Software Package
 - g) MBHD-V.35-366 V.35/RS366 Codec Cables (Generic), 4 each
- 7.13 The Bidder (Contractor) shall be the authorized distributor for the Bandwidth Manager-Inverse Multiplexer furnished to this project.
- 7.14 Provide to the Owner one (1) complete documentation package for each Bandwidth Manager-Inverse Multiplexer which shall include all relevant installation, set-up, operation and maintenance information.

8 BANDWIDTH MANAGER-INVERSE MULTIPLEXER - TYPE "B3"

- 8.1 The Bandwidth Manager-Inverse Multiplexer shall support dial-up video conferencing and a data router connection, functioning both as a bandwidth manager and as an inverse multiplexer.
- 8.2 The Bandwidth Manager-Inverse Multiplexer shall be equipped with two (2) T1/PRI network interface ports each with integrated CSU.
- 8.3 The Bandwidth Manager-Inverse Multiplexer shall be equipped with two (2) V.35 serial ports and eight (8) ISDN BRI ports that shall support:
 - a) One (1) single V.35/RS-366 video conference system,
 - b) Eight (8) BRI video conference systems, and
 - c) One data V.35 data router connection.

- 8.4 The Bandwidth Manager-Inverse Multiplexer V.35 serial connections shall support data rates up to and including 768 Kb/s. These same ports shall also support the RS-366 dialing functions.
- 8.5 The Bandwidth Manager-Inverse Multiplexer BRI connections shall support data rates up to and including 128 Kb/s.
- 8.6 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for AT&T ESS, NorTel DMS (National 1) and Siemens EWSD central office switches.
- 8.7 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for Teleos Model 60 and Model 200 video switches.
- 8.8 The Bandwidth Manager-Inverse Multiplexer shall be equipped with set-up, operation and diagnostic functions accessible through an RS-232 maintenance terminal port.
- 8.9 The Bandwidth Manager-Inverse Multiplexer shall include SNMP (Simplified Network Management Protocol) capability and a 10BASE-T Ethernet connection.
- 8.10 The Bandwidth Manager-Inverse Multiplexer shall be capable of mounting in the roll-about video conferencing systems specified above.
- 8.11 The Bandwidth Manager-Inverse Multiplexer shall operate from standard-120 volt AC electrical power.
- 8.12 The Bandwidth Manager-Inverse Multiplexer shall be the Ascend MAX (Model MX-2T1) with all slot cards required to support the specified connectivity.
- 8.13 The Bandwidth Manager-Inverse Multiplexer shall include all of the following:
- a) MX-2T1 Base Unit
 - b) MX-AC-RM Rack Mounting Brackets
 - c) MX-SR-T1-STD Installed Software Release MAX T1/PRI DOM
 - d) MX-HO-2CSU Installed Hardware Option HO 2CSU Interface
 - e) MX-SP-VIDEO Installed Software Video Package
 - f) MX-SO-ISDN Installed ISDN Software Package
 - g) MX-SL-32ETH Slot Card Ethernet 32 CH HDLC
 - h) MX-SL-8BRI Slot Cards 8BRI Desktop Video
 - i) MX-HD-V.35-366 V.35/RS366 Codec Cables (Generic), 1 each
 - j) MX-HD-V.35 V.35 Router Cable (Generic), 1 each
- 8.14 The Bidder (Contractor) shall be the authorized distributor for the Bandwidth Manager-Inverse Multiplexer furnished to this project.

- 8.15 Provide to the Owner one (1) complete documentation package for each Bandwidth Manager-Inverse Multiplexer which shall include all relevant installation, set-up, operation and maintenance information.

9 BANDWIDTH MANAGER-INVERSE MULTIPLEXER - TYPE "B4"

- 9.1 The Bandwidth Manager-Inverse Multiplexer shall support dial-up video conferencing and a data router connection, functioning both as a bandwidth manager and as an inverse multiplexer.
- 9.2 The Bandwidth Manager-Inverse Multiplexer shall be equipped with two (2) T1/PRI network interface ports each with integrated CSU.
- 9.3 The Bandwidth Manager-Inverse Multiplexer shall be equipped with four (4) V.35 serial ports and eight (8) ISDN BRI ports that shall support:
- a) One (1) dual V.35/RS-366 video conference system,
 - b) One (1) single V.35/RS-366 video conference system,
 - c) Eight (8) BRI video conference systems, and
 - d) One data V.35 data router connection.
- 9.4 The Bandwidth Manager-Inverse Multiplexer V.35 serial connections shall support data rates up to and including 768 Kb/s. These same ports shall also support the RS-366 dialing functions.
- 9.5 The Bandwidth Manager-Inverse Multiplexer BRI connections shall support data rates up to and including 128 Kb/s.
- 9.6 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for AT&T ESS, NorTel DMS (National 1) and Siemens EWSD central office switches.
- 9.7 The Bandwidth Manager-Inverse Multiplexer shall support ISDN network signaling protocols for Teleos Model 60 and Model 200 video switches.
- 9.8 The Bandwidth Manager-Inverse Multiplexer shall be equipped with set-up, operation and diagnostic functions accessible through an RS-232 maintenance terminal port.
- 9.9 The Bandwidth Manager-Inverse Multiplexer shall include SNMP (Simplified Network Management Protocol) capability and a 10BASE-T Ethernet connection.
- 9.10 The Bandwidth Manager-Inverse Multiplexer shall be capable of mounting in the roll-about video conferencing systems specified above.
- 9.11 The Bandwidth Manager-Inverse Multiplexer shall operate from standard 120 volt AC electrical power.

- 9.12 The Bandwidth Manager-Inverse Multiplexer shall be the Ascend MAX (Model MX-2T1) with all slot cards required to support the specified connectivity.
- 9.13 The Bandwidth Manager-Inverse Multiplexer shall include all of the following:
- a) MX-2T1 Base Unit
 - b) MB-SR-T1-STD Installed Software Release MAX T1/PRI DOM
 - c) MX-HO-2CSU Installed Hardware Option HO 2CSU Interface
 - d) MX-SL-2PMHP Slot Card 2 IMUX V.35/RS449/X.21
 - e) MX-SP-VIDEO Installed Software Video Package
 - f) MX-SO-ISDN Installed ISDN Software Package
 - g) MX-SL-32ETH Slot Card Ethernet 32 CH HDLC
 - h) MX-SL-8BRI Slot Cards 8BRI Desktop Video
 - i) MX-HD-V.35-366 V.35/RS366 Codec Cables (Generic), 2 each
 - j) MX-HD-V.35 V.35 Router Cable (Generic), 1 each
- 9.14 The Bidder (Contractor) shall be the authorized distributor for the Bandwidth Manager-Inverse Multiplexer furnished to this project.
- 9.15 Provide to the Owner one (1) complete documentation package for each Bandwidth Manager-Inverse Multiplexer which shall include all relevant installation, set-up, operation and maintenance information.

10 LINE EXTENDER

- 10.1 The Line Extender shall facilitate connection of the video codec to the bandwidth manager-inverse multiplexer via a four wire (two twisted pair) interface.
- 10.2 Wiring and wiring termination shall be identical to that required to support Ethernet 10Base-T connectivity (EIA/TIA 568A).
- 10.3 The Line Extender shall support dual 768 Kb/s V.35 serial and RS366 dialing connections at distances of up to 1,700 feet.
- 10.4 The Line Extender shall operate from standard 120 volt AC electrical power.
- 10.5 The Line Extender shall be the Ascend RPM-2 Remote Port Module set (2 units).
- 10.6 The Line Extender shall include all cables required to facilitate one (1) dual channel connection between the line extender unit and the specified Bandwidth Manager-Inverse Multiplexer.
- 10.7 The Bidder (Contractor) shall be the authorized distributor for the Line Extender furnished to this project.